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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,270	12/22/2004	Kari Kautio	890A.0003.U1(US)	8980

29683 7590 03/24/2006

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EXAMINER
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EL SHAMMAA, MARY A

ART UNIT	PAPER NUMBER
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2883

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/519,270	Applicant(s) KAUTIO ET AL. 	
	Examiner Mary A. El-Shammaa	Art Unit 2883	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                            |                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/04</u> . | 6) <input type="checkbox"/> Other: ____.                                                |

## DETAILED ACTION

### *Specification*

The disclosure is objected to because of the following informalities: page 1, line 18 “resesses” should be – *recesses* – and page 3, line 17 “bum” should be – *bump* –.

Appropriate correction is required.

### *Claim Objections*

Claims 6 and 12, line 4 are objected to because of the following informalities: “the metallized surface” lacks antecedent basis. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8, 10-12, 14, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Duesman et al. (US 6,217,232 B1).

Regarding claims 1-4 and 10, Duesman discloses a method and an arrangement for aligning at least one optic and/or electronic component on a substrate or a corresponding support structure comprising arranging a hole in the support structure; arranging at least three stud bumps on the surface of the component; arranging said stud bumps along the periphery of the hole for

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alignment of the component to the hole; arranging the outer surfaces of the stud bumps against the hole walls; threading the optic fiber through the hole; aligning the optic fiber and the component with each other by means of the stud bumps; and arranging the fiber against the inner surfaces of the stud bumps (see abstract and col. 1, line 50 through col. 2, line 28; col. 2, line 66 through col. 3, line 38; col. 4, lines 5-14).

Regarding claims 5 and 11, Duesman discloses the stud bumps having at least partly conical and/or rounded surfaces, and that aligning the optic fiber with the component is performed by adapting the optic fiber along sloping conical inner surfaces and a horizontal brim in the stud bumps (col. 4, lines 30-57).

Regarding claims 6 and 12, Duesman discloses the component being a surface emitting optoelectronic component, that the optic fiber is arranged perpendicular to the support structure, and that the fiber is connected to a radiating source on a metallized surface of the component facing the substrate (see abstract and col. 1, line 50 through col. 2, line 28; col. 2, line 66 through col. 3, line 38; col. 4, lines 5-14).

Regarding claims 8 and 14, Duesman discloses a direct bonding method being used to connect the stud bumps to the support structure (col. 3, lines 14-45 and col. 4, lines 5-14 and 61-65).

Regarding claim 16, Duesman discloses the substrate consisting of at least two layers, and that the diameter of the hole portion(s) in the layer(s) near the component is bigger, having place for both the stud bumps and the optic fiber than in other opening portion(s) having a diameter essentially corresponding to the diameter of the optic fiber (see abstract and col. 1, line 50 through col. 2, line 28; col. 2, line 66 through col. 3, line 38; col. 4, lines 5-14).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 9, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duesman et al. (US 6,217,232 B1).

Regarding claims 7, 9, 13, and 15, Duesman discloses the claimed invention except for the use of a conductive adhesive and a solder material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a conductive adhesive and a solder material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416. The motivation to use a conductive adhesive and a solder material is because these materials are readily available in the art and inexpensive while effective.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary A. El-Shammaa whose telephone number is 571.272.2469. The examiner can normally be reached on M-F (8:30am-5:00pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*MAE*

*March 15, 2006*



**Frank G. Font**  
**Supervisory Patent Examiner**  
**Technology Center 2883**